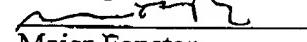


REMARKS

The present application is a U.S. national application of PCT Application No. PCT/IL00/00132 filed March 5, 2000 . The present amendment is based on the claims as originally filed. The claims in the present application were amended by limiting the number of claims and removing multiple dependencies, to reduce costs and put them in better form for examination in the US.

An examination on the merits is respectfully requested.

Respectfully submitted,
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September 4, 2001

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Marked-Up Version of Amendments:**IN THE SPECIFICATION****RELATED APPLICATIONS**

This Application is a U.S. national filing of PCT Application No. PCT/IL00/00132, filed March 5, 2000. This application claims the benefit under 119(e) of US provisional application 60/123,523, filed March 5, 1999, the disclosure of which is incorporated herein by reference.

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IN THE CLAIMS

3.(Amended) Apparatus according to claim 1 or ~~claim 2~~, wherein said controller comprises a casing suitable for long term implantation inside the body.

4.(Amended) Apparatus according to ~~claim 1~~ any of claims 1-3, wherein said electrode is adapted for long term contact with blic fluids.

5.(Amended) Apparatus according to ~~claim 1~~ any of claims 1-4, comprising an electrical activity sensor for sensing electrical activity of said cell and wherein said power source electrifies said electrode at a frequency higher than a sensed depolarization frequency of said cell, thereby causing said cell to depolarize at the higher frequency.

25 6.(Amended) Apparatus according to ~~claim 1~~ any of claims 1-5, wherein said pulse is designed to extend a plateau duration of an action potential of said cell, thereby allowing more calcium inflow into the cell.

30 10.(Amended) Apparatus according to ~~claim 1~~ any of claims 1-9, comprising at least a second electrode adjacent for electrifying a second cell or group of insulin secreting cells, wherein said controller electrifies said second electrode with a second pulse different from said first electrode.

14.(Amended) Apparatus according to ~~claim 1~~ any of claims 1-13, wherein said controller electrifies said at least one electrode with a pacing pulse having a sufficient amplitude to force

a significant portion of said cells to depolarize, thus aligning the cells' action potentials with respect to the non-excitatory pulse electrification.

5 15.(Amended) Apparatus according to claim 1-any of claims 1-14, wherein said controller synchronizes the electrification of said electrode to a burst activity of said cell.

16.(Amended) Apparatus according to claim 1-any of claims 1-14, wherein said controller synchronizes the electrification of said electrode to an individual action potential of said cell.

10 17.(Amended) Apparatus according to claim 1-any of claims 1-14, wherein said controller does not synchronize the electrification of said electrode to electrical activity of said cell.

18.(Amended) Apparatus according to claim 1-any of claims 1-16, wherein said controller does not apply said pulse at every action potential of said cell.

19.(Amended) Apparatus according to claim 1-any of claims 1-16, wherein said controller does not apply said pulse at every burst activity of said cell.

20.(Amended) Apparatus according to claim 1-any of claims 1-19, wherein said pulse has a duration of less than a single action potential of said cell.

22.(Amended) Apparatus according to claim 1-any of claims 1-19, whercin said pulse has a duration of longer than a single action potential of said cell.

25 23.(Amended) Apparatus according to claim 1-any of claims 1-19, wherein said pulse has a duration of longer than a burst activity duration of said cell.

24.(Amended) Apparatus according to claim 1-any of claims 1-23, wherein said controller determines said electrification in response to a pharmaceutical treatment applied to the cell.

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26.(Amended) Apparatus according to claim 24-~~or claim 25~~, wherein said controller applies said pulse to counteract adverse effects of said pharmaceutical treatment.

- 27.(Amended) Apparatus according to claim 24 or claim 25, wherein said controller applies said pulse to synergistically interact with said pharmaceutical treatment.
- 28.(amended) Apparatus according to claim 24 or claim 25, wherein said controller applies
5 said pulse to counteract adverse effects of pacing stimulation of said cell.
- 29.(Amended) Apparatus according to claim 1 or any of claims 1-28, comprising an alert generator.
- 10 35.(Amended) A method according to claim 32 or any of claims 32-34, comprising applying a plurality of pulses in a sequence designed to achieve a desired effect on said at least a part of a pancreas.